Exploring the Extreme			
2002 Science and Technology			
Academic Standards			
Pennsylvania Science and Technology			
Grade 4			
Activity/Lesson	**State**	**Standards**	
Finding the Center of Gravity Using Rulers	PA	SCT.4.3.1.4.B.2	Identify and apply models as tools for prediction and insight.
Finding the Center of Gravity Using Rulers	PA	SCT.4.3.1.4.B.3	Apply appropriate simple modeling tools and techniques.
Finding the Center of Gravity Using Rulers	PA	SCT.4.3.2.4.C.2	Design an investigation.
Finding the Center of Gravity Using Rulers	PA	SCT.4.3.4.4.C.3	Describe various types of motions.
Finding the Center of Gravity Using Rulers	PA	SCT.4.3.7.4.B.1	Develop simple skills to measure, record, cut and fasten.
Finding the Center of Gravity Using Plumb Lines	PA	SCT.4.3.1.4.B.1	Identify different types of models.
Finding the Center of Gravity Using Plumb Lines	PA	SCT.4.3.1.4.C.2	Use knowledge of natural patterns to predict next occurrences (e.g., seasons, leaf patterns, lunar phases).
Finding the Center of Gravity Using Plumb Lines	PA	SCT.4.3.2.4.C.2	Design an investigation.
Finding the Center of Gravity Using Plumb Lines	PA	SCT.4.3.4.4.C.3	Describe various types of motions.
Finding the Center of Gravity Using Plumb Lines	PA	SCT.4.3.7.4.B.1	Develop simple skills to measure, record, cut and fasten.
Changing the Center of Gravity Using Moment Arms	PA	SCT.4.3.1.4.B.1	Identify different types of models.
Changing the Center of Gravity Using Moment Arms	PA	SCT.4.3.1.4.B.2	Identify and apply models as tools for prediction and insight.
Changing the Center of Gravity Using Moment Arms	PA	SCT.4.3.1.4.B.3	Apply appropriate simple modeling tools and techniques.
Changing the Center of Gravity Using Moment Arms	PA	SCT.4.3.2.4.C.2	Design an investigation.
Changing the Center of Gravity Using Moment Arms	PA	SCT.4.3.4.4.C.3	Describe various types of motions.

Changing the Center of Gravity Using Moment Arms	PA	SCT.4.3.7.4.B.1	Develop simple skills to measure, record, cut and fasten.
Exploring the Extreme			
2002 Science and Technology			
Academic Standards			
Pennsylvania Science and Technology			
Grade 7			
Activity/Lesson	**State**	**Standards**	
Jet Propulsion	PA	SCT.7.3.1.7.B.1	Identify and describe different types of models and their functions.
Jet Propulsion	PA	SCT.7.3.1.7.B.3	Explain systems by outlining a system's relevant parts and its purpose and/or designing a model that illustrates its function.
Jet Propulsion	PA	SCT.7.3.2.7.B.3	Communicate, use space / time relationships, define operationally, raise questions, formulate hypotheses, test and experiment,
Jet Propulsion	PA	SCT.7.3.2.7.B.4	Design controlled experiments, recognize variables, and manipulate variables.
Jet Propulsion	PA	SCT.7.3.2.7.B.5	Interpret data, formulate models, design models, and produce solutions.
Jet Propulsion	PA	SCT.7.3.2.7.C.3	Design an investigation with limited variables to investigate a question.
Jet Propulsion	PA	SCT.7.3.2.7.C.6	Communicate appropriate conclusions from the experiment.
Jet Propulsion	PA	SCT.7.3.4.7.C.3	Explain various motions using models.
Jet Propulsion	PA	SCT.7.3.6.7.B.4	Apply the appropriate method of communications technology to communicate a thought.
Vectoring	PA	SCT.7.3.1.7.B.1	Identify and describe different types of models and their functions.
Vectoring	PA	SCT.7.3.1.7.B.2	Apply models to predict specific results and observations (e.g., population growth, effects of infectious organisms).
Vectoring	PA	SCT.7.3.2.7.B.2	Describe relationships by making inferences and predictions.
Vectoring	PA	SCT.7.3.2.7.B.3	Communicate, use space / time relationships, define operationally, raise questions, formulate hypotheses, test and experiment,
Vectoring	PA	SCT.7.3.2.7.B.5	Interpret data, formulate models, design models, and produce solutions.
Vectoring	PA	SCT.7.3.2.7.C.6	Communicate appropriate conclusions from the experiment.
Vectoring	PA	SCT.7.3.2.7.D.6	Explain the results, present improvements, identify and infer the impacts of the solution.

Vectoring	PA	SCT.7.3.4.7.C.3	Explain various motions using models.
Vectoring	PA	SCT.7.3.6.7.B.4	Apply the appropriate method of communications technology to communicate a thought.
Center of Gravity, Pitch, Yaw	PA	SCT.7.3.1.7.B.1	Identify and describe different types of models and their functions.
Center of Gravity, Pitch, Yaw	PA	SCT.7.3.1.7.B.3	Explain systems by outlining a system's relevant parts and its purpose and/or designing a model that illustrates its function.
Center of Gravity, Pitch, Yaw	PA	SCT.7.3.2.7.B.5	Interpret data, formulate models, design models, and produce solutions.
Center of Gravity, Pitch, Yaw	PA	SCT.7.3.4.7.C.3	Explain various motions using models.